

ORGANIC ELECTROLUMINESCENT DEVICES USING DOUBLE-SPIRO ORGANIC COMPOUNDS

Abstract of the Disclosure

Disclosed are double-spiro organic compounds for use in the organic electroluminescence. The double-spiro organic compounds have a configuration or structure including at least three planar moieties, which are substantially linearly configured such that one planar moiety is interveningly located between two neighboring planar moieties and that the intervening planar moiety shares an atom with each of the two neighboring planar moieties. The intervening planar moiety is substantially perpendicular to the two neighboring planar moieties. The two atoms shared with the neighboring planar moieties are preferably most apart from each other in the intervening planar moieties. The double-spiro compounds generally have high melting point above about 300 °C and low crystallinity, which provide thermal stability to the organic EL devices. Also, the double-spiro organic compounds have good sublimability, which provide applicability to the physical vapor deposition. Further, double-spiro compounds have light-emitting, hole-injecting, hole-transporting, electron injection, electron-transporting properties and characteristics, which are favorable in the organic EL devices. Also disclosed is an organic electroluminescent (EL) device having at least one layer containing one or more of the double-spiro organic compounds.

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